





National Program of Cancer Registries Education and Training Series

How to Collect High Quality Cancer Surveillance Data

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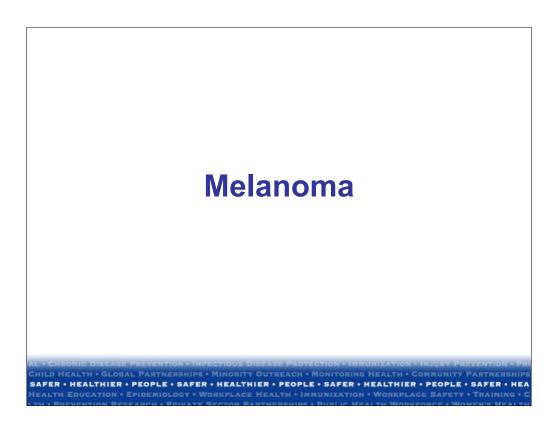
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Melanoma is a cancer that develops by malignant transformation of melanocytes. A melanocyte is a cell that produces melanin, the pigment or coloring of the skin, and protects the deep layers of the skin. Melanoma most commonly arises in the skin, but it may also occur in other organs.

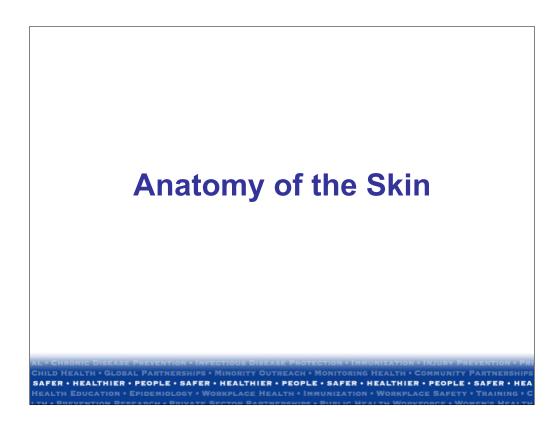
Melanoma

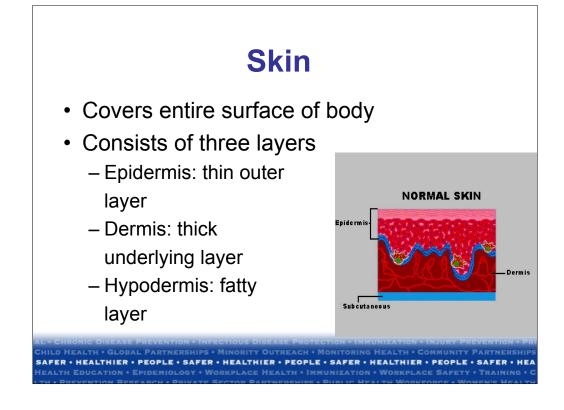


- Sites include
 - Skin (C44.0-C44.9)
 - Vulva (C51.0-C51.2, C51.8-C51.9)
 - Penis (C60.0-C60.2, C60.8-C60.9)
 - Scrotum (C63.2)
- Accounts for approximately 4% of newly diagnosed cancers annually

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For this presentation, we will be discussing melanoma of the skin, vulva, penis, and scrotum. In their publication, *Cancer Facts and Figures 2005*, the American Cancer Society estimates that in 2005, 59,580 new cases of melanoma will be diagnosed in the United States and 7,770 people will die from melanoma. Melanoma accounts for approximately four percent of newly diagnosed cancers annually, and it is the most serious type of skin cancer. Melanoma can also originate in other organs including the eye, colon, and upper respiratory tract; however, melanoma in those sites will not be addressed in this presentation.





Skin covers the entire surface of the body and protects the body from the outside environment and from injury. Skin is the body's largest organ. The epidermis is the tough, protective layer that contains melanin. The dermis contains nerve endings, sweat glands, oil glands, and hair follicles. The hypodermis is the fatty layer of subcutaneous tissue.

Epidermis

- Consists of five sub-layers
- · Basal cell layer
 - Innermost layer of epidermis
 - Contains basal cells
 - Contains melanocytes that produce melanin
 - Melanoma develops when melanocytes undergo malignant transformation
 - Contains Merkel cells

The epidermis, the outer most layer of skin, consists of five sub-layers. The basal layer is the innermost layer of epidermis and contains basal cells that continuously divide and push old cells to the skin surface where they shed. The basal cell layer also contains melanocytes, the cells that produce melanin or skin coloring. Melanoma develops when the melanocytes undergo malignant transformation. The basal layer also contains Merkel cells, specialized cells that are believed to act as touch receptors.

Epidermis

- Squamous cell layer
 - Resides above basal layer
 - Called stratum spinosum
 - Contains keratinocytes
 - Contains Langerhans cells
 - Is the thickest part of epidermis

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The squamous cell layer is above the basal layer. It is also called the stratum spinosum or spiny layer because it's held together by spiny projections. The basal cells that have been pushed up to this layer are now keratinocytes, squamous cells that contain keratin. Keratin is a protein found in skin, hair, and nails. The squamous layer also contains Langerhans cells. Langerhans cells are antigen-presenting cells that participate in the immune response of the skin. The squamous cell layer is the thickest layer of the epidermis.

Epidermis

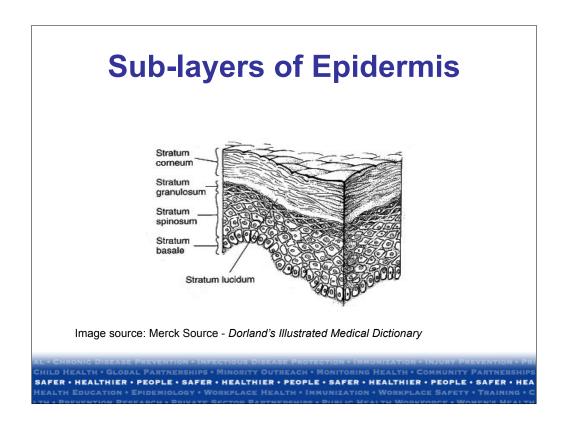
- Stratum granulosum
 - Thin granular layer
- Stratum lucidum
 - Translucent layer
- Stratum corneum
 - Outermost layer
 - Sloughs off dead keratinocytes

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The stratum granulosum and stratum lucidum are two thin layers of epidermis that contain keratinocytes pushed up from the squamous cell layer. The keratinocytes in these layers become bigger and flatter and eventually dehydrate and die. The stratum corneum is the outermost layer of the epidermis. It continuously sloughs off the dead keratinocytes.



This diagram shows the 5 sub-layers of the epidermis we just discussed. [TRAINER INSTRUCTIONS: Point out each layer beginning with stratum basale, basal cell layer; stratum spinosum, squamous cell layer; stratum granulosum; stratum lucidum; and stratum corneum.

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Dermis

- Thickest of the three layers
- · Main functions are:
 - Stores much of the body's supply of water
 - Supplies nutrients to the epidermis
 - Regulates body temperature

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The dermis is the thickest of the three layers of skin and contains 90% of the thickness of the skin. The dermis stores the majority of the body's supply of water. It supplies blood filled with nutrients to the epidermis. It also aids in the regulation of the body's temperature.

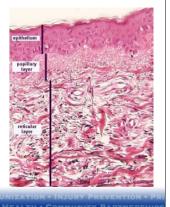
Dermis

- Contains specialized cells and structures
 - Blood vessels
 - Lymph vessels
 - Hair follicles
 - Sweat glands
 - Sebaceous glands
 - Nerve endings
 - Collagen

The dermis contains many of the specialized cells and structures of the body including the blood vessels, lymph vessels, hair follicles, sweat glands, sebaceous glands, nerve endings, and collagen. The blood vessels supply nutrients and oxygen throughout the body and remove waste products from the body. The lymph vessels bathe the skin with lymph, a substance that contains cells that defend the body against disease and infection. The hair follicles are tubular-shaped structures that surround and nourish the hair. There are two types of sweat glands. The apocrine glands are located in the armpits and pubic area and secrete sweat that encourages the growth of bacteria that create body odor. The eccrine glands are the true sweat glands and are found all over the body. They promote cooling of the body by evaporating their secretions. The sebaceous glands secrete oil to keep the skin smooth and supple, to waterproof the skin, and to protect the skin against overgrowth of fungi and bacteria. They are found on all parts of the skin except the palms of the hand and soles of the feet. The nerve endings convey sensations such as pain, itch, and pressure to the brain to interpret. Collagen is a protein that holds together and supports the dermis. It is made up of fibroblasts, cells that make the skin strong and resilient.

Dermis

- Papillary layer
 - Regulates body temperature
 - Supplies epidermis with nutrient-filled blood
- Reticular layer
 - Provides structure and elasticity
 - Supports components of skin



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The dermis layer is made up of two sublayers. The papillary layer of the dermis regulates body temperature and supplies the epidermis with nutrient-filled blood. The reticular layer (lower layer) is made up of collagen that provides structure and elasticity to the skin as well as supporting the components of the skin.

Hypodermis

- Network of fat and collagen
- Functions as:
 - Shock-absorber for body
 - Insulator
 - Stores fat as energy reserve

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The hypodermis is the innermost fatty layer of skin that is also known as the subcutis or subcutaneous layer. It is made up of fat and collagen and acts as a shock absorber to protect the body's internal organs. It also insulates the body to help conserve body heat. The fat stored in the hypodermis is used by the body as an energy reserve.

ICD-O-3 Histology Coding Melanoma

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Caution!!

Pre-2007

Multiple Primary and Histology Rules used in the following slides are based on 2006 rules.



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Common Melanoma Histology

- Superficial spreading melanoma (8743/3)
 - 70% of melanoma cases
- Nodular melanoma (8721/3)
 - 15% of melanoma cases
- Acral lentiginous melanoma (8744/3)
 - -8% of melanoma cases
- Lentigo maligna melanoma (8742/3)
 - 5% of melanoma cases

ICD-O-3 codes with the first three digits from 872 through 879 are classified as melanoma. The most commonly occurring melanoma, approximately 70% of melanoma cases, is superficial spreading melanoma. It most often arises at the site of a pre-existing nevus. Nodular melanoma makes up 15% of the cases and is more common among older males. Acral lentiginous melanoma makes up 8% of the melanoma cases, but it is the most common melanoma diagnosed in dark-skinned people. Lentigo maligna melanoma occurs in 5% of the cases. Typically it is diagnosed on the face and neck of elderly, very sun-tanned people.

- Rules are a hierarchy
- Use rules in priority order with rule 1 having highest priority
- · Use the first rule that applies
- Rules from SEER Program Coding and Staging Manual (PCSM) 2004, pages 86– 87

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The histology coding rules are a hierarchy. They are listed in priority order and rule 1 has the highest priority. When determining what code to record for histology, begin with rule 1 and stop when you get to the first rule that applies. If rule 1 applies, there is no need to go any further. The rules for coding histology are found in the SEER Program Coding and Staging Manual (PCSM) 2004, pages 86–87.

Single Tumor

1. Code the histology if only one type is mentioned in the pathology report

Example: Right arm lesion, superficial spreading melanoma

Answer: 8743/3 Superficial spreading melanoma

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The first set of rules is for single tumors.

Rule 1: Code the histology if only one type is mentioned in the pathology report.

Example: There is one right arm lesion with histology described as superficial spreading melanoma. The histology code is 8743/3, superficial spreading melanoma.

2. Code the **invasive histology** when both invasive and in situ tumor are present

Example: Upper back lesion, lentigo maligna and superficial spreading melanoma

Lentigo maligna 8742/2 Superficial spreading melanoma 8743/3

Answer: 8743/3 Superficial spreading melanoma

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Rule 2: Code the **invasive histology** when both invasive and in situ tumor are present.

Example: This single lesion of the upper back contains both lentigo maligna, an in situ histology, and superficial spreading melanoma, an invasive histology. The invasive histology, superficial spreading melanoma, is recorded.

2. (Continued)

Exception: If the histology of the invasive component is an NOS term (melanoma, NOS), then code the histology using the specific term associated with the in situ component and the invasive behavior.

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Exception to Rule 2: If the histology of the invasive component is an NOS term such as melanoma, then code the histology using the specific term associated with the in situ component and the invasive behavior.

2. (Continued)

Example: Chest lesion, melanoma and lentigo maligna

Malignant melanoma, NOS 8720/3 Lentigo maligna 8742/2

Answer: 8742/3 Lentigo maligna melanoma

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Example: The single chest lesion contains melanoma, a malignant NOS histology, and lentigo maligna, a specific histology with in situ behavior. The exception to rule 2 tells us to code the specific histology, in this case lentigo maligna, and to code the malignant behavior from the NOS histology. So, the correct code is 8742/3, lentigo maligna melanoma.

3. Use a **mixed** histology code if one exists

Example: Scalp lesion, spindle cell, and mixed epitheloid melanoma

Answer: 8770/3 Mixed epitheloid and spindle cell melanoma

4. Use a **combination** histology code if one exists

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The next two rules pertain to mixed and combination codes.

Rule 3: Use a mixed histology code if one exists.

Example: The description of histology for this scalp lesion is spindle cell and mixed epitheloid melanoma. There is a mixed code to use when these cell types are combined in the same lesion. The correct histology code is 8770/3, mixed epitheloid and spindle cell melanoma.

Rule 4: Use a combination histology code if one exists. There are no combination codes for melanoma.

5. Code the more specific term when one of the terms is NOS and the other is more specific description of same histology

Example: Left thigh lesion, melanoma and desmoplastic melanoma

Malignant melanoma, NOS 8720/3 Desmoplastic melanoma 8745/3

Answer: 8745/3 Desmoplastic melanoma, malignant

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Rule 5: Code the more specific histology when one of the terms is NOS and the other is a specific description of the same histology.

Example: The lesion of the left thigh contains melanoma, an NOS histology, and desmoplastic melanoma, a more specific melanoma histology. The code for the more specific melanoma histology, desmoplastic melanoma (8745/3), should be recorded.

- 6. Code the majority of the tumor
- Terms that mean majority of tumor:
 - Predominantly; with features of; major; type (eff. 1/1/99); with....differentiation (eff. 1/1/99); pattern and architecture (if in CAP protocol; eff. 1/1/2003)
 - Terms documented in SEER PCSM 2004, page 85

Rule 6: Code the majority of the tumor. Terms that indicate "majority of tumor" include "predominantly," "with features of," "major," "type (effective January 1, 1999), "with...differentiation" (effective January 1, 1999), "pattern and architecture" [if in College of American Pathologists (CAP) protocol, effective January 1, 2003].

The list of majority terms is found on p. 85 of the SEER Program Coding and Staging Manual (PCSM) 2004.

6. (Continued)

Example: Chest lesion, superficial spreading melanoma, nodular type

Superficial spreading melanoma 8743/3

Nodular melanoma 8721/3

Answer: 8721/3 Nodular melanoma

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Example: The histology of the chest lesion is described as superficial spreading melanoma, nodular type. Because type is a term that indicates tumor majority, the nodular type of melanoma should be recorded as the histology. The correct code for nodular melanoma is 8721/3.

- 6. (Continued)
- Terms that DO NOT mean majority of tumor
 - With foci of; focus of/focal; areas of; elements of; component (eff.1/1/99)
 - Terms documented in SEER PCSM 2004, page 85

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Terms that do not mean majority of tumor are "with foci of," "focus of/focal," "areas of," "elements of," "component" (effective January 1, 1999). They are also found on page 85 of the SEER Program Coding and Staging Manual (PCSM) 2004. If these terms are used, the histology does not represent the majority of the tumor and should not be recorded as the histology.

6. (Continued)

Example: Right forearm, nodular melanoma with a component of lentigo maligna melanoma

Nodular melanoma 8721/3

Lentigo maligna melanoma 8742/3

Answer: 8721/3 Nodular melanoma

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Example: The histology of the single lesion of the right forearm is described as nodular melanoma with a component of lentigo maligna melanoma. Component does not indicate tumor majority. Nodular melanoma, 8721/3, is recorded as histology.

7. Code the numerically higher ICD-O-3 code

Example: Left hip lesion, spindle cell melanoma and nodular melanoma

Spindle cell melanoma 8772/3

Nodular melanoma 8721/3

Answer: 8772/3 Spindle cell melanoma

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Rule 7: The last rule for single tumors says to code the numerically higher ICD-O-3 code. This rule should be used infrequently.

Example: The single left hip lesion contains both spindle cell melanoma and nodular melanoma. None of the previous rules applies to this situation so the histology with the highest code should be recorded. In this case, the histology with the highest code is 8772/3, spindle cell melanoma.

Multiple Tumors with <u>Different Behaviors</u> in Same Organ Reported as Single Primary

Code the histology of the invasive tumor when one lesion is in situ and the other is invasive

Example: 2 lesions, left ankle:

1) lentigo maligna 8742/2

2) lentigo maligna melanoma 8742/3

Answer: 8742/3 Lentigo maligna melanoma

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This rule is used when there are multiple tumors with different behaviors in the same organ reported as a single primary. Code the histology of the invasive tumor when one lesion is in situ and the other is invasive.

Example: There are 2 lesions on the left ankle. One contains lentigo maligna, histology with in situ behavior, and the other contains lentigo maligna melanoma, the same histology with malignant behavior. This is one primary, and the malignant histology, lentigo maligna melanoma (8742/3), is recorded.

Multiple Tumors in <u>Same Organ</u> Reported as Single Primary

1. Code histology when multiple tumors have the same histology

Example: Left lower back, 2 lesions:

amelanotic melanoma 8730/3
 amelanotic melanoma 8730/3

Answer: 8730/3 Amelanotic melanoma

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The rules for multiple tumors in the same organ reported as a single primary follow.

Rule 1: Code the histology when multiple tumors have the same histology.

Example: There are two lesions in the same site, the left lower back, and they are the same histology, amelanotic melanoma. Record the histology, amelanotic melanoma (8730/3), for this single primary. Rules 2, 3, and 4 for multiple tumors in the same organ reported as a single primary are not applicable to melanoma.

5. Code the more specific term when one of the terms is NOS and the other is a more specific description of the same histology

Example: Right arm, 2 lesions:

melanoma, NOS
 balloon cell melanoma
 8720/3
 8722/3

Answer: 8722/3 Balloon cell melanoma

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Rule 5: Code the more specific term when one of the terms is NOS and the other is a more specific description of the same histology.

Example: The patient has two skin lesions on the right arm. The first lesion contains melanoma, an NOS histology, and the second lesion contains balloon cell melanoma, a specific melanoma histology. The two lesions are in the same site and considered one primary. The more specific histology should be recorded. The correct histology code is 8722/3.

6. Code all other multiple tumors with different histologies as multiple primaries

Example: Left leg, 2 lesions:

nodular melanoma 8721/3
 amelanotic melanoma 8730/3

Answer: 2 primary sites; complete abstract for each one

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Rule 6: Code all other multiple tumors with different histologies as multiple primaries. If there are two lesions in the same skin site, they are considered two primaries if the histology in each lesion is different. If none of the previous five rules applies to the situation, the histology is different and the two lesions are considered different primaries.

Example: There are two separate lesions of the left leg. One is nodular melanoma, and the other lesion is amelanotic melanoma. None of the previous five rules applies, and the histologies are different. The two lesions of the left leg are considered separate primaries and two abstracts are completed.

Coding Behavior for Melanoma

- Synonyms for in situ, behavior code 2
 - Basement membrane of epidermis intact
 - Clark's level I
 - Intraepithelial
 - Noninvasive

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We have completed our discussion of histology coding rules and will now discuss coding behavior for melanoma. In situ melanoma, behavior code 2, and malignant melanoma, behavior code 3, are both reportable. Synonyms for in situ behavior for melanoma include basement membrane of epidermis intact, Clark's level I, intraepithelial, and noninvasive.

Coding Grade for Melanoma

- Histologic grade, differentiation, codes
 - 1 = well differentiated
 - 2 = moderately differentiated
 - 3= poorly differentiated
 - 4= undifferentiated

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Grade is the measurement of how closely cancer cells resemble the cells of the organ in which the cancer originated. Grade 1 indicates that the cancer cells closely resemble those of the organ of origin. As the grade number increases, the resemblance of cancer cells to those of the organ of origin decreases. Grade 4 cancers have little or no resemblance to the cells of the organ of origin. The code definitions for grade are shown on this slide; 1 is well differentiated, 2 is moderately differentiated, 3 is poorly differentiated, and 4 is undifferentiated. There are no histology-specific grading systems for melanoma.

Abstracting Melanoma Cases AL*Chronic Disease Prevention*Infectious Disease Protection*Immunication*Injury Prevention*Print Child Health * Global Partnerships * Minority Outreach * Monitoring Health * Community Partnerships Safer * Healthier * People * Safer * Healthier * Peo

Date of Diagnosis: Melanoma

- Review all sources for first date of diagnosis
 - Physical exams
 - Pathologic confirmation
 - Physicians' and nurses' notes
 - Consultation reports

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Review the patient's health record carefully to identify the date of first cancer diagnosis. Documentation may be found in the physical exam, pathology reports, physicians' and nurses' notes, and consultation reports. If a patient is receiving treatment at one facility and was diagnosed elsewhere, the date of diagnosis may be found in copies of reports forwarded from the diagnosing facility or in consultation reports. If a patient was diagnosed in a dermatologist's office and then received treatment (such as a wide re-excision) at a hospital, be sure to review the dermatologist's records for first date of diagnosis. When determining diagnosis date, remember the ambiguous terms that constitute a cancer diagnosis and those that do not.

Ambiguous Diagnostic Terms That Constitute a Cancer Diagnosis

- Apparent(ly)
- Appears
- Comparable with
- Compatible with
- Consistent with
- Favors
- Malignant appearing
- Most likely

- Presumed
- Probable
- Suspect(ed)
- Suspicious (for)
- Typical of

The terms shown on this slide are ambiguous terms that constitute a cancer diagnosis. If that documentation is the first diagnosis of cancer on a report, including physical examination, then the date it was made is the date of diagnosis. The list of terms is documented in *FORDS*, page 3, and *SEER Program Coding and Staging Manual (PCSM) 2004*, page 3.

Ambiguous Diagnostic Terms That <u>Do</u> Not Constitute a Cancer Diagnosis

- Cannot be ruled out
- Equivocal
- Possible
- Potentially malignant
- Questionable
- Rule out
- Suggests
- Worrisome

If the terms on this slide are included in a diagnosis, they <u>do not</u> constitute a diagnosis of cancer. The date the information was discovered would <u>not</u> be the date of diagnosis. The list of terms is documented in *FORDS*, page 4, and *SEER Program Coding and Staging Manual (PCSM) 2004*, page 3.

Determining Primary Site for Melanoma

 Difference in 4th digit of topography code indicates a different primary site for skin (C44.0–C44.9)

Example: Melanoma of the skin of the lip and ear

Answer: 2 different sites

Skin of lip C44.0 Skin of external ear C44.2

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For the skin sites, C44.0–C44.9, a difference in the fourth digit of the topography code indicates a different site.

Example: A patient is diagnosed with melanoma of skin of the lip, C44.0, and of the external ear, C44.2. They are considered two different sites because there is a difference in the fourth digit of the topography codes for subsites of the skin. They would be abstracted as two primaries.

Determining Primary Site for Melanoma

- Difference in 4th digit of topography code does not indicate a difference in primary site for
 - Penis (C60.0-C60.2, C60.8-C60.9)
 - Vulva (C51.0-C51.2, C51.8-C51.9)

Example: Melanoma, 2 lesions

1) Glans penis

C60.1

2) Body of penis

C60.2

Answer: C60.9 Penis, NOS

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For vulva and penis, a difference in the fourth digit of the topography code is not a different site. If there are two lesions in different subsites of the penis or vulva, the histology of the lesions must be different to be counted as two primaries. If two lesions are found in the vulva or penis and they are considered 1 primary, assign the subsite '9'. This is documented in the SEER Program Coding and Staging Manual 2004, page 74, coding instruction #4 for coding primary site.

Example: The patient has two melanoma lesions diagnosed simultaneously, a lesion on the glans penis, C60.1, and a lesion on the body of the penis, C60.2. The two lesions are the same histology (melanoma) and present in different subsites of the same organ. The first three digits of the ICD-O-3 topography codes are the same for each subsite so this is considered one site. This is a single primary and the subsite coded is C60.9.

Laterality for Melanoma

- Skin sites for which laterality is recorded per FORDS p. 11 and SEER PCSM 2004 p. 79
 - Skin of eyelid C44.1
 - Skin of external ear C44.2
 - Skin of face C44.3
 - Skin of trunk C44.5
 - Skin of upper limb and shoulder C44.6
 - Skin of lower limb and hip C44.7

Laterality describes the side of the body or side of a paired organ on which a tumor originates. Laterality is recorded for certain areas of the body covered by skin. If both sides of an area of the body covered by skin for which laterality is recorded contain cancer, they are counted as separate primaries unless one side is described as metastatic from the other. The skin sites defined as paired organs are skin of eyelid, skin of external ear, skin of face, skin of trunk, skin of upper limb and shoulder, and skin of lower limb and hip. This is documented in *FORDS* page 11 and *SEER Program Coding and Staging Manual (PCSM) 2004*, page 79.

Tumor Invasion for Melanoma

- · Clark's level
 - Measures melanoma invasion by anatomic levels
- Breslow thickness
 - Measures depth of skin penetration by melanoma

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For melanoma, the invasiveness of the tumor is measured by two different scales. The Clark's level measures tumor invasion by anatomic layer of the skin from the outermost layer, the epidermis, to the deepest layer, the hypodermis. Clark's level of invasion is used when coding the data item, CS extension. Breslow thickness is the measurement of the depth of skin penetration by the melanoma. If the depth of penetration of the melanoma is less than 1 mm, it is considered lower risk; 1 to 3.99 mm depth of penetration is considered intermediate risk; and depth of penetration of 4.0 mm or higher is considered higher risk. The Breslow thickness is recorded in the data item, site-specific factor 1, for melanoma of skin, vulva, penis, or scrotum. However, site-specific factor 1 is not submitted to NPCR.

Melanoma Work-up

- Physical exam
 - Skin examination
 - Number of nevi
 - Changes in moles and surrounding skin
 - Sensation
 - Consistency
 - Laterality
 - Lymph node examination
 - · Size of nodes
 - Number of palpable nodes

The initial work-up for melanoma includes a thorough examination of skin. The number of nevi should be counted. Moles should be examined for any changes in color, shape, size, or extension. Sensations in a mole, such as burning or itching, should be noted. Changes in the consistency of a mole, such as softening or friability, should also be noted. The laterality of the abnormal lesion should be described. Lymph nodes should be examined carefully because regional lymph nodes are the most common site of spread for melanoma. Documentation should include the size and number of palpable lymph nodes.

Melanoma Work-up

- Imaging studies
 - Chest X-ray
 - CT scan of abdomen/pelvis
 - CT scan of bone
 - CT scan of brain
 - CT scan of chest
 - CT scan of liver/spleen

Imaging studies are performed to determine the spread of the melanoma. Chest X-ray, computerized tomography (CT) of chest, and CT of liver/spleen are performed because lung and liver are common sites of metastatic melanoma. CT scans of abdomen, bone, and brain are also performed to check for metastatic disease.

Melanoma Work-up

- Biopsy
 - Incisional
 - · Shave biopsy, skin punch, wedge excision
 - Excisional biopsy

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An incisional biopsy, which includes shave biopsy, skin punch, or wedge excision, may be performed to diagnose melanoma but it may not provide all of the information needed to make treatment decisions. An excisional biopsy is removal of the entire lesion and provides more information when determining treatment choices. Both incisional and excisional biopsy may provide information on size of tumor and depth of invasion. Lab work may be part of the work-up when diagnosing melanoma, but it is not pertinent for data collection by NPCR registries because the information does not affect the summary stage.

The Anatomy of Collaborative Staging: Malignant Melanoma

Presentation developed by Collaborative Staging Steering Committee ajcc@facs.org

2005 update

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Malignant Melanoma of Skin

- Collaborative Staging data items submitted to NPCR
 - CS Extension
 - CS Lymph Nodes
 - CS Mets at Dx

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The collaborative staging data items discussed in this presentation are those required to be submitted to NPCR. For melanoma they include CS extension, CS lymph nodes, and CS mets at dx. The complete CS data set is required to be collected by Commission on Cancer approved cancer programs.

CS Melanoma

- Schema for skin, vulva, penis, scrotum
- Melanoma of visceral sites coded by site-specific schema
- Do NOT use melanoma of skin schema for
 - Mucous membranes
 - Oral cavity, nasopharynx, vagina, urethra, anal canal
 - Other visceral sites
 - Eye and adnexa

The schema presented here is used for melanoma of skin, vulva, penis, and scrotum. If melanoma is diagnosed in the sites with mucous membranes such as the oral cavity, nasopharynx, vagina, urethra, and anal canal or in other visceral sites, use the site-specific schema to code CS data items. For patients with melanoma of the eye itself, there are four different melanoma schemas. Choice of schema for melanoma of the eye is dependent on the eye subsite of tumor origin.

CS Extension Melanoma: Notes

- 1. If discrepancy between Clark's level and pathologic extent, use higher code
- 2. Code satellite lesions/nodules or in transit mets in CS Lymph Nodes
- 3. Code ulceration in SSF2
- 4. Note 4 deleted August 2004

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The data item, CS extension, evaluates the level of tumor invasion of the anatomic layers of the skin for melanoma. Presented here are the coding notes that proceed the CS extension codes for melanoma in the *Collaborative Staging Manual*.

Note 1: When coding CS extension for melanoma, if there is a discrepancy between the documented Clark's level and the pathologic extension of the tumor, use the higher code. For example, if the record states that the melanoma is Clark's level III (code 20) and the papillary dermis is involved (code 10), assign the code for Clark's level III, (20), because it's higher.

Note 2: Satellite lesions or in-transit metastases are coded in CS lymph nodes.

Note 3: Ulceration is not coded in CS extension.

Note 4 was deleted in August 2004.

Ext.	Clark's Level	Anatomic Extent	
00	I	Melanoma in situ	
10	II	Papillary dermis	
20	III	Papillary-reticular dermal interface	- Clark level II
30	IV	Reticular dermis	9d05ANDRUKEN PAKA
40		Skin/dermis, NOS; loca	lized, NOS
50	V	Subcutaneous tissue	Clark level V

Clark's level is a measure of tumor invasion of the anatomic layers of the skin for melanoma. Extension codes 00 through 30 and code 50 are based on the Clark's level. Clark's level I melanoma is confined to the epidermis and is an in situ tumor. The CS extension code is 00. The epidermis is the thin outer layer of the skin. Clark's level II melanoma invades the papillary dermis, the outer layer of the dermis, and CS extension code is 10. Clark's level III melanoma fills the papillary dermis and extends to the interface between the papillary and reticular dermis. The extension code is 20. Clark's level IV melanoma invades the reticular dermis, the inner layer of the dermis, and the extension code is 30. The dermis is the thick underlying layer of the skin. Extension code 40 is assigned for melanoma that invades the skin and is localized, but there is no more specific information describing the invasive level of the tumor. Clark's level V melanoma invades the subcutaneous tissue, and the extension code is 50. Subcutaneous tissue is the hypodermis or fatty layer of the skin.

CS Extension Melanoma

Ext.	Clark Level	Anatomic Extent
80		Further contiguous extension
95		No evidence of primary tumor
99		Unknown extension

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Code 80 is assigned for melanoma when there is direct extension beyond anything described in codes 00-50. It includes direct extension into the underlying cartilage, bone, or skeletal muscle. If there is no evidence of the primary melanoma, assign code 95. If the tumor extension is unknown, cannot be assessed, or is not documented, assign code 99.

CS Lymph Nodes Melanoma: Notes

 Code regional nodes and nodes, NOS, only; distant nodes coded in CS Mets at Dx

Specific regional LNs listed by primary site

Code 10: regional nodes by site

Code 12: certain head and neck nodes

Regional lymph nodes include ipsilateral or contralateral nodes for head, neck, and trunk; ipsilateral nodes for extremities

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The notes presented here precede the codes for CS lymph nodes in the *Collaborative Staging Manual.*

Note 1: In CS lymph nodes, we code involvement of regional lymph nodes or lymph nodes, NOS. Distant lymph nodes are coded in CS mets at dx. Code 10 includes a list of regional lymph nodes by specific site. Lymph nodes coded as 12 were considered distant in summary stage 1977 but are now coded as regional lymph nodes. They are given a separate code so that both 1977 and 2000 summary stage can be derived. For skin sites of the head, neck, or trunk ipsilateral or contralateral lymph node involvement is considered regional and coded in this data item. For the extremities, arms and legs, only ipsilateral node involvement is considered regional. Involvement of contralateral nodes of arms and legs is coded in CS mets at dx.

CS Lymph Nodes Melanoma: Notes

2. Satellite lesions/nodules or in-transit metastasis coded in CS Lymph Nodes

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Note 2: Satellite lesions/nodules or in-transit metastasis are coded under CS Lymph Nodes because they are defined as intralymphatic metastases.

CS Lymph Nodes Melanoma: Notes

3. Clarification (added August 2004)

Codes 10-12

Regional nodes involved without nodules or intransit mets

Codes 13-15

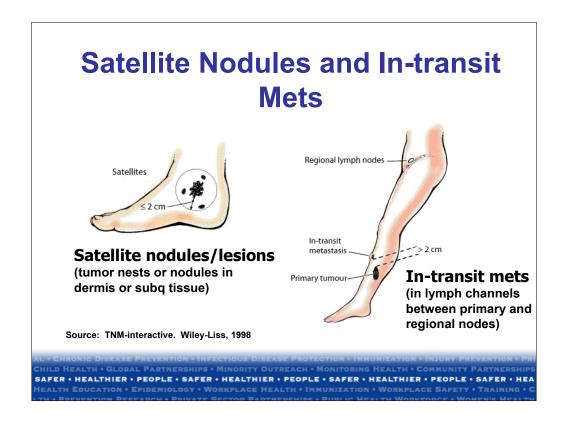
Satellites or in-transit mets without regional node involvement

Codes 20-22

Both satellites or in-transit mets and regional nodes involved

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Note 3: When there is regional node involvement but there are no satellite nodule(s) or in-transit metastases, use codes 10–12. When there are satellite nodule(s) or in-transit metastases but there is either no regional lymph node involvement, or involvement of regional nodes is not stated, use codes 13–15. If both satellite nodules(s)/in-transit metastases and regional lymph node(s) are present, use codes 20–22.



The picture on the left shows satellite nodules from melanoma. Satellite nodules are defined by AJCC as intralymphatic metastases that occur within 2 cm of the primary melanoma. The picture on the right shows in-transit metastasis. They are traveling in the lymph channels between the primary site and the regional lymph nodes. Following the AJCC definition, in-transit metastasis occurs more than 2 cm from the primary melanoma but before the first regional lymph nodes.

CS Lymph Nodes Melanoma Revised and new codes 13–15

- 13 Satellite nodules or in-transit mets (distance from primary not stated)
 WITHOUT nodes or nodes not stated
- 14 Satellite nodules or in-transit mets < 2 cm from primary, WITHOUT nodes or nodes not stated
- 15 Satellite nodules or in-transit mets > 2 cm from primary tumor WITHOUT nodes or nodes not stated

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The next two slides show CS lymph nodes codes that were revised or added in August 2004 and April 2005. Code 13 is assigned when the patient has satellite nodules or in-transit metastases, but the distance of the satellite nodules or intransit metastases from the primary site is not stated and regional lymph nodes are not involved. If satellite nodules or in-transit metastases are 2 cm or less from the primary site and lymph nodes are not involved or not stated, assign code 14. If satellite nodules or in-transit metastases are more than 2 cm away from the primary site and nodes are not involved or not stated, assign code 15.

CS Lymph Nodes Melanoma

Revised and new codes 17,18, 20, 22

- 17 Matted nodes listed in code 10
- 18 Matted nodes listed in code 12
- 20 Satellite nodules or in-transit mets WITH regional nodes listed in code 10
- 22 Satellite nodules or in-transit mets WITH regional nodes listed in code 12

CS lymph nodes codes 17–22 are used to further describe conditions in other codes. If lymph nodes listed in code 10 are matted, code 17 is assigned; and if lymph nodes listed in code 12 are matted, code 18 is assigned. If there is involvement of lymph nodes listed in code 10 as well as satellite nodules or intransit metastases, assign code 20. If there is involvement of lymph nodes listed in code 12 as well as satellite nodules or in-transit metastases, assign code 22.

CS Mets at Dx Melanoma

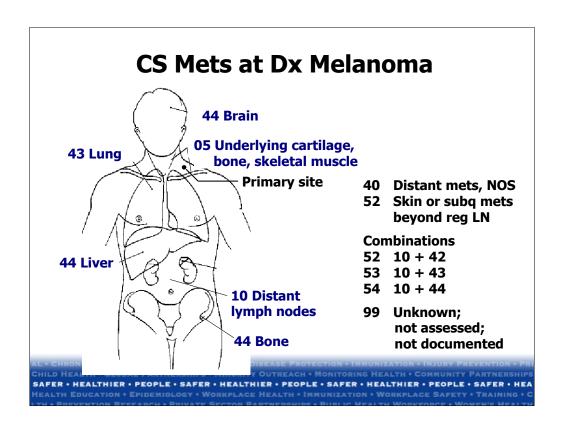
- 00 No; none
- 05 Underlying cartilage, bone, skeletal muscle
- 10 Distant lymph nodes
- 40 Distant metastasis, NOS
- 42 Metastasis to skin or subcutaneous tissue beyond regional lymph nodes

Discontinuous distant metastasis is coded in CS mets at dx using the codes shown on the next two slides. Assign code 00 when there is no distant metastasis. Use code 05 when there is <u>discontinuous</u> metastasis to underlying cartilage, bone, or skeletal muscle. Contiguous extension to underlying cartilage, bone or skeletal muscle is coded in CS extension. Assign code 10 if there is distant lymph node involvement. Different lymph node regions are considered distant for each skin site and for vulva, penis, and scrotum. For example, involvement of a cervical lymph node with a skin of the arm primary would be assigned code 10 in the data item, CS mets at dx. However, cervical lymph nodes are regional nodes for skin of the trunk. Code 40 is used for distant metastasis, NOS. It is known that the metastasis is distant, but a specific distant site is not documented. If there is metastasis to the skin or to the subcutaneous tissue that is beyond the regional lymph nodes, assign code 42. For example, if a patient has a primary melanoma of the right side of the abdomen and involvement of the skin of the right thigh is documented as metastatic, assign code 42.

CS Mets at Dx Melanoma

- 43 Lung
- 44 Other distant metastases
- 52 (10) + (42)
- 53 (10) + (43)
- 54 (10) + (44)
- 99 Unknown

Code 43 is assigned when there is metastasis to the lung. If the patient has a specific distant site documented that does not have its own code in CS mets at dx, use code 44. Codes 52–54 describe combinations of distant metastases. Use code 52 when there is involvement of distant lymph nodes (code 10) and metastases to skin or subcutaneous tissue beyond the regional lymph nodes (code 42). Use code 53 when there is involvement of distant lymph nodes (code 10) and the lung (code 43). Use code 54 when there is involvement of distant lymph nodes (code 10) and other distant metastases (code 44). Code 99 is assigned when it is unknown if there is distant metastasis.



This picture illustrates some of the CS mets at dx codes for melanoma. Code 05 indicates cartilage, bone, and skeletal muscle involvement with the primary site being skin of the shoulder. The primary site is the dot below 05. Code 10 indicates the lymph nodes that are distant from the primary site. Code 43 indicates involvement of the lung. Code 44 indicates involvement of the pelvic bone, liver, and brain. All are named sites without a code of their own in the CS mets at dx schema for melanoma so they are assigned code 44.

Case Study 1: Nodes negative (clinical only)

 1 cm lesion on shoulder, cervical and axillary LN neg on PE. Remainder of PE neg. Exc. bx: Clark level II, Breslow 1.33 mm.

CS Extension
 Clark level II
 CS Lymph nodes
 Negative on physical exam
 CS Mets at Dx
 Exam negative

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CS extension is coded 10 because Clark level II is documented in the excisional biopsy.

CS lymph nodes is coded 00 because axillary lymph nodes were negative on physical exam.

CS mets at dx is coded 00 because it is documented that the remainder of the physical exam was negative.

Case Study 2: In-transit mets

 Small (< 1 cm) nodule on calf. Exc. bx: ulcerated nodular melanoma, Clark IV, Breslow 3.42 mm. Small dark nodule on inner thigh 5 cm from primary bx'd: same cell type. Rest of exam negative.

CS Extension 30 Clark level IV

– CS Lymph nodes 15 In-transit mets > 2 cm

away; involvement of regional nodes not

stated

CS Mets at Dx
 Exam negative

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CS extension is coded 30, Clark level IV per excisional biopsy.

CS lymph nodes is coded 15 because the nodule on the inner thigh is in-transit metastasis that is more than 2 cm (5 cm) from the primary site, and there is no stated involvement of regional lymph nodes.

CS mets at dx is coded 00 because the rest of the exam is stated to be negative.

Case Study 3: Involved lymph nodes

• 2 cm area of purplish discoloration with raised center on forearm. Axilla negative. Rest of exam WNL. Exc. bx: superficial spreading melanoma, Breslow 2.02 mm. Wide exc. negative; AxLND: 1/8 node pos.

 CS Extension 99 Unknown extension - CS Lymph nodes Axillary LN from arm 10 primary - CS Mets at Dx Negative on exam 00

CS extension is coded 99, unknown, no documentation of extension.

CS lymph nodes is coded 10 because the axillary lymph node dissection documents involvement of an axillary lymph node with a primary of the skin of the arm.

CS mets at dx is coded 00, rest of the exam was within normal limits.

Case Study 4: Mets at diagnosis

 Difficulty breathing. CXR shows multiple metastatic lesions bilaterally. FNA LLL: metastatic melanoma. No apparent moles or skin lesions; no lymphadenopathy. LDH elevated (2 tests). Site: C44.9, Skin, NOS.

– CS Extension95 No evidence of primary tumor

– CS Lymph nodes 00 No

lymphadenopathy

CS Mets at Dx
 Lung mets only

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CS extension is coded 95, no evidence of primary melanoma.

CS lymph nodes is coded 00, no lymphadenopathy documented.

CS mets at dx is coded 43, metastasis to lungs per chest X-ray.



First Course Treatment

- Intended to affect tumor by
 - Modification
 - Control
 - Removal
 - Destruction
- Includes curative and palliative treatment

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First course treatment is defined in *FORDS 2004*, page 28, as "all methods of treatment recorded in the treatment plan and administered to the patient before disease progression or recurrence." The intent of treatment is to modify, control, remove, or destroy the tumor. Curative treatment as well as treatment given to control symptoms, alleviate pain, or make the patient more comfortable may also be first course treatment. We will discuss the first course treatment data items the central registry is required to submit to NPCR.

Surgical Procedure of Primary Site

- Skin surgical procedure of primary site codes used for skin sites (C44.0–C44.9)
 - FORDS Appendix B, page 268 and SEER
 PCSM 2004 Appendix C, pages C-439 and C-440

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The codes for surgical procedure of the primary site are site-specific. Document the most invasive surgical procedure of the primary site if more than one procedure was performed. For example, if a patient had an excisional biopsy of a melanoma of the arm and later as part of first course treatment had a wide-re-excision of the same site, the wide re-excision would be documented in the data item, surgical procedure of primary site, because it was the most extensive procedure performed. If biopsy is the most extensive procedure performed and it removes all of the tumor and/or leaves only microscopic margins, the procedure should be coded in the data item, surgical procedure of primary site. For example, a biopsy of a lesion of the thigh is performed. The pathology report indicates that the entire tumor was removed and the margins are clear. If a more extensive procedure is not performed, the biopsy is recorded in the data item, surgical procedure of primary site. One set of surgical procedure codes is used for skin. The codes are documented in *FORDS*, Appendix B, page 268, and *SEER Program Coding and Staging Manual (PCSM) 2004*, Appendix C, pages C-439 and 440.

Surgical Procedure of Primary Site

- 'All other sites' surgical procedure of primary site codes for:
 - Vulva (C51.0-C51.2, C51.8-C51.9)
 - Penis (C60.0-C60.2, C60.8-C60.9)
 - Scrotum (C63.2)
 - FORDS Appendix B, page 284 and SEER PCSM 2004 Appendix C, page C-441

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The 'all other sites' surgical procedure codes are used for vulva, penis, and scrotum. They are documented in *FORDS*, Appendix B, page 284, and *SEER Program Coding and Staging Manual (PCSM) 2004*, Appendix C, page C-441.

Surgical Procedure of Primary Site: Skin

- Code 00: None
- Codes 10–14
 - Local tumor destruction <u>without</u> pathology specimen
 - Photodynamic therapy (PDT), electrocautery, cryosurgery, laser
- Codes 20-27
 - Local tumor excision with pathology specimen
 - Excisional biopsy alone or in conjunction with laser, cryosurgery, electrocautery, or PDT

These are the site-specific surgical procedure of primary site codes for skin.

Surgical procedure of primary site includes some type of tumor destruction or removal. Incisional biopsy alone, unless it completely excises the tumor, is not coded as a surgical procedure of primary site. Code 00 is assigned when no surgery of the primary site was performed. Codes 10 through 14 are used when the tumor is destroyed but there is no pathology specimen. Photodynamic therapy (PDT) uses light to destroy the tumor; electrocautery burns the tumor; cryosurgery destroys the tumor by freezing it; and laser (light amplification by stimulated emission of radiation) destroys the tumor with radiation. Codes 20 through 27 are used when the tumor is excised and there is a pathology specimen. This includes excisional biopsy alone or in conjunction with PDT, laser, cryosurgery, or electrocautery.

Surgical Procedure of Primary Site: Skin

- Codes 30–36
 - Biopsy of tumor followed by gross excision of lesion
 - Does not have to be done under the same anesthesia

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If the patient with skin melanoma had a biopsy of any type including shave, incisional, or wedge resection, and it was followed by a gross excision of the tumor, use codes 30 through 36. The procedures do not have to be done at the same time under the same anesthesia. Codes 30–33 are used for biopsy of some type followed by gross excision of the lesion. To be assigned codes 30–33, the gross excision of lesion that follows the biopsy has surgical margins less than 1 cm or unknown margins. This is documented in a note on p. C-439 of Appendix C of the SEER Program Coding and Staging Manual (PCSM) 2004. Codes 34–36 are used when the patient had Mohs procedure or surgery. Mohs surgery is a technique of serial excision of skin cancer and microscopic analysis of excised tissue. Which Mohs code is used is dependent on the status of the margins.

Surgical Procedure of Primary Site: Skin

- Codes 45–47
 - Wide excision or re-excision of lesion or minor (local) amputation with margins more than 1 cm; margins must be microscopically negative
- Code 60: Major amputation
- Code 90: Surgery, NOS
- Code 99: Unknown

Codes 45–47 are used for skin sites when a patient had a wide excision, wide reexcision, or local amputation and the microscopic margins were negative and
greater than 1 cm. Local amputation is partial removal of the skin site. Code 60 is
assigned when the patient had a major amputation. If a patient with melanoma of
the ankle had the leg amputated below the knee, the surgery would be recorded as
60. Code 90 is used when a surgery is performed to the primary site but it cannot
be coded using any of the other site-specific codes. Code 99 is used when it is
unknown if the patient had surgery to the primary site.

Surgical Procedure of Primary Site: Vulva, Penis, Scrotum

- Code 30
 - Simple/partial removal of primary site
 - Partial penectomy
- Code 40
 - Total surgical removal of primary site
 - Total vulvectomy

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The site-specific surgical procedure of primary site codes used for vulva, penis, and scrotum are the codes for 'all other sites.' The codes are documented in *FORDS*, Appendix B, page 284, and *SEER Program Coding and Staging Manual 2004*, Appendix C, page C-441. Codes 00–27 presented for the skin sites are the same for vulva, penis, and scrotum. Code 30 is assigned for vulva, penis, or scrotum if the patient had a simple or partial removal of the primary site. For example, a partial penectomy for melanoma of the penis is assigned code 30. Code 40 is used when the patient received total surgical removal of the primary site. An example of this would be a total vulvectomy for a patient with melanoma of the labia minora.

Surgical Procedure of Primary Site: Vulva, Penis, Scrotum

- Code 50
 - Surgery stated to be "debulking"
- Code 60
 - Partial or total removal of the primary with with resection in continuity with other organs

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Code 50 is assigned for surgery that is described to be for the purpose of debulking. Debulking is the removal of a major portion of the material that composes a lesion so there is less tumor load for subsequent treatment. This is rare surgery for melanoma of vulva, penis or scrotum. Code 60 is used if the primary site was partially or totally removed in continuity with other organs. If the patient had a total vulvectomy with resection of vagina and both were removed in one piece, the surgical procedure of primary site code would be 60. Codes 90 and 99 are the same definition for vulva, penis, and scrotum as for skin.

Scope of Regional Lymph Node Surgery: Melanoma

- Code sentinel lymph node biopsy
 - Biopsy of first regional node to receive lymph drainage from primary skin site
- Code regional lymph node dissection

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Procedures recorded in the data item, scope of regional lymph node surgery, include procedures that aspirate, biopsy, or remove regional lymph nodes. The procedures may be performed at the time of the surgery of the primary site or as a separate surgical event. Aspiration, biopsy, or removal of <u>distant</u> lymph nodes is not recorded in this data item. Patients with melanoma of the skin may receive a sentinel lymph node biopsy as part of work-up and treatment. The sentinel lymph node biopsy evaluates the first node to receive lymph drainage from the primary skin site. If that node is negative, the patient may not have lymph node metastasis and a regional lymph node dissection may not be needed. If a lymph node dissection is performed, it is recorded in this data item even if it is negative.

Scope of Regional Lymph Node Surgery Codes

Code	Label
0	None
1	Biopsy or aspiration of regional LNs, NOS
2	Sentinel LN biopsy
3	Number of regional LNs removed unknown
4	1-3 regional LNs removed
5	4 or more regional LNs removed
6	Sentinel biopsy and code 3, 4, or 5 at same time or timing not stated
7	Sentinel biopsy and code 3, 4, or 5 at different times
9	Unknown

The codes for the scope of regional lymph node surgery are shown on this slide. They are the same for all sites. Sentinel lymph node biopsy alone for melanoma of skin is assigned code 2. If the patient has a sentinel lymph node biopsy as well as sampling or dissection of other regional lymph nodes, code 6 or 7 is assigned. Sampling or dissection of regional lymph nodes without sentinel biopsy is assigned code 3, 4, or 5.

Surgical Procedure/Other Site

- Record removal of distant lymph nodes or other tissues beyond the primary site
 - Biopsy of lung lesion with metastatic melanoma
 - Surgical ablation of liver metastasis
 - Biopsy of cervical lymph node for patient with melanoma of right arm

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If distant lymph nodes or tissues beyond the primary site are excised, the procedure is coded in the data item, surgical procedure/other site even if it is negative. Examples of procedures recorded in this data item for melanoma include the excisional biopsy of a lung lesion that shows metastatic melanoma, surgical ablation of liver metastasis in a melanoma patient, or resection of a cervical lymph node for a patient with melanoma of the right arm.

S	Surgical Procedure/Other Site Codes
Code	Label
0	None
1	Nonprimary surgical procedure performed
2	Nonprimary surgical procedure to other regional sites
3	Nonprimary surgical procedure to distant lymph nodes
4	Nonprimary surgical procedure to distant site
5	Combination of codes
9	Unknown
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The codes for surgical procedure/other site are shown on this slide. The same codes are used for all sites. If a patient with melanoma of the left thigh had an excisional lung biopsy, the procedure is assigned code 4, nonprimary surgical procedure to distant site, because the entire tumor in a distant site was resected. If a patient with melanoma of the right arm had a resection of a cervical lymph node, the procedure is assigned code 3, nonprimary surgical procedure to distant lymph nodes.

Other Therapies: Melanoma

- Regional treatment modality
 - External beam
- Chemotherapy
 - Melphalan, Interleukin
- Hormone therapy
 - Tamoxifen

Web site.

- Immunotherapy
 - Interferon, Ganglioside vaccine

Patients with more advanced melanoma may receive additional treatment. The modality used to deliver radiation therapy is recorded in the data item, regional treatment modality. Most melanomas are resistant to radiation therapy. However, radiation may be given as palliative treatment for more advanced melanoma. It may also be applied to the regional lymph node basin of the primary site to prevent tumor recurrence. Review the record carefully to ensure that the radiation therapy is part of the first course treatment. Chemotherapeutic agents used for melanoma in 2005 include but are not limited to Melphalan and Interleukin. Hormone therapy may also be given to patients with melanoma. Tamoxifen in combination with chemotherapy has met with some success in treating melanoma patients. Immunotherapy is another adjuvant therapy given to patient's with late stage melanoma. Agents include but are not limited to high-dose Interferon and Ganglioside vaccine. Review health records carefully to ensure that the adjuvant therapy given is part of first course treatment. Radiation therapy, chemotherapy, hormone therapy, and immunotherapy may also be given as subsequent treatment for disease progression or recurrence. When trying to determine what type of systemic therapy a drug given for cancer treatment is, use the SEER*Rx, an interactive antineoplastic drug database that can be downloaded from the SEER